

1. Which of the following types of electrodes requires are to be baked before use

- (a) Low hydrogen
- (b) Rutile
- (c) Copper coated wires used for submerged arc welding
- (d) None of these

Ans: (b)

2. Baking of electrodes is done for

- (a) To dry the electrode or for removing moisture
- (b) Bonding the flux
- (c) To remove resins
- (d) None of these

Ans: (a)

3. Carbon di-oxide welding is an example of

- (a) MIG
- (b) MAG
- (c) TIG
- (d) None of these

Ans: (b)

Note: MAG - Metal active gas welding

4. Preheating of material to be welded is necessary in case of

- (a) Carbon steel
- (b) Cast iron
- (c) High speed steel
- (d) Stainless steel

Ans: (b)

Note: Preheating minimizes the temperature difference between the welding arc and the base material. Slowing the cooling rate also allows hydrogen to escape the weld puddle as it hardens to help minimize cracking. preheating introduces the necessary heat into the weld area to ensure proper penetration

5. The welding process that can be used for welding precision parts is

- (a) TIG
- (b) MIG
- (c) MMAW
- (d) Flash butt

Ans: (a)

6. Long welded rails are manufactured in factories by

- (a) Forge welding
- (b) Thermit welding
- (c) MMAW
- (d) Flash butt welding

Ans: (d)

7. Pot welding is an example of rails

- (a) **Thermit welding** (b) Resistance welding
(c) Arc welding (d) None of these

Ans: (a)

8. The gauge used by welder for checking the fillet of weld is

- (a) Throat gauge (b) **Fillet gauge**
(c) Welding gauge (d) None of these

Ans: (b)

9. The unit of measurement of current is

- (a) volt (b) kw (c) kva (d) **ampere**

Ans: (d)

10. The most convenient position for welding is

- (a) Uphand (b) **Downhand** (c) Vertical (d) None of these

Ans: (b)

The flat welding position is the easiest position and most desirable position to weld. In the flat position the metal is flat and welding torch or rod is going to move in a horizontal direction. The other positions are called Out Of Position because they are more difficult and require more skill to do them weld. The out of position welding positions are Vertical, and Overhead.

11. The equipment which is used to facilitate positioning of assemblies during welding is called

- (a) **Positioner** (b) Calibrator (c) Facilitator (d) None of these

Ans: (a)

12. Continuous welding electrode in wire for is used in

- (a) CO₂ welding (b) SAW
(c) Electro slag welding (d) **All of this methods**

Ans: (d)

13. The job of continuously feeding the electrode in a CO₂ welding set is done by

- (a) Rectifier (b) **Wire feeder**
(c) Power source (d) None of these

Ans: (b)

14. Which of the following is the better conductor of electricity?

- (a) Copper (b) Aluminium (c) Stainless steel (d) Nickel

Ans: (a)

15. When the size of the electrode used increases the current used

- (a) Does not change (b) Increases
(c) Decreases (d) None of these

Ans: (b)

16. Which of the following is a destructive testing?

- (a) Radiography (b) Dye penetrant
(c) Magnaflux (d) Tensile test

Ans: (d)

Destructive testing methods are commonly used for materials characterisation, fabrication validation, failure investigation, and can form a key part of engineering critical assessments, which also involves non-destructive testing (NDT) techniques such as digital radiography.

DESTRUCTIVE TESTING METHODS

Tensile Testing

Hardness testing

Charpy V-notch and Izod Impact Testing

Stress Rupture Testing

Metallography and Microstructural Evaluation

Chemical Analyses

Corrosion testing, etc.

NONDESTRUCTIVE TESTING METHODS

VISUAL INSPECTION

Ultrasonic Testing (UT)

Radiographic Inspection (RT)

Magnetic Particle Inspection (MPI)

Liquid Penetrant Testing (PT)

Acoustic emission testing (AT)

Eddy current testing (ECT)

Leak testing

17. Which of the following gas mixtures is used generally for gas cutting?

- (a) Oxygen-hydrogen (b) Hydrogen-acetylene

(c) Oxygen(oxy)-acetylene

(d) Acetylene-argon

Ans: (c)

Oxy-fuel cutting is a thermal cutting process that uses oxygen and fuel gas (such as acetylene, propane, MAPP, propylene and natural gas) to cut through materials. The oxyfuel process is the most widely applied industrial thermal cutting process because it can cut thicknesses from 0.5mm to 250mm, the equipment is low cost and can be used manually or mechanised. There are several fuel gas and nozzle design options that can significantly enhance performance in terms of cut quality and cutting speed.

<https://www.twi-global.com/technical-knowledge/job-knowledge/cutting-processes-application-of-oxyfuel-cutting-050>

18. The most suitable process for straight fillet welding of two 16 mm M.S. plates is

(a) Spot welding

(b) TIG welding

(c) Submerged arc welding

(d) Steam Welding(resistance Welding)

Ans: (c)

19. The function of rectifier is to

(a) Generate electricity

(b) To convert AC to DC

(c) To convert DC to AC

(d) None of these

Ans: (b)

20. Which of the following is not a must as safety equipment for a welder working on MMAW?

(a) Goggles

(b) Ear plug

(c) Hand gloves

(d) Shoes

Ans: (b)

21. The most suitable process for welding of bodies and side walls of rail coaches and car bodies

(a) Resistance Spot welding/ Resistance seam welding

(b) TIG welding

(c) Submerged arc welding

(d) None of these

Ans: a

22. In a TIG welding..... is used as electrode

(a) Tungsten

(b) Titanium

(c) Tin

(d) None of these

Ans: (a)

23. A bar has taper diameter on one side is 120 mm and on the other side 100 mm. The length of the bar is 1000 mm. The taper is

- (a) 20 in 100 (b) 1 in 100 (c) 20 in 120 (d) None of these

Ans: (b)

24. The surface finish requirement is indicated by

- (a) Inverted triangle (b) Triangle (c) Square (d) Round

Ans: (a)

25. A steel shaft of 25 mm diameter is rotating at a speed of 400 rpm during a turning operation. What is the cutting speed in m/min?

- (a) 31.4 (b) 10 (c) 15 (d) None of these

Ans: (a) $(V = \frac{\pi DN}{1000} m/min = \frac{\pi DN}{60000} m/s$ where D is in mm and N is RPM)

26. In an piece of work of 350 mm length at an rpm of 200, one complete cut is achieved in 7 minutes. What is the feed?

- (a) 50 mm/revaluation (b) 25 mm/ revolution
(c) 0.25 mm / revaluation (d) None of these

Ans: (c)

27. A tap is used for

- (a) Reaming (b) Internal threading (c) Drilling (d) Countersinking

Ans: b

28. When the temperature of the cutting edge is kept low the tool life

- (a) Increases (b) Decreases (c) Remains same (d) None of these

Ans: a

Note: Process fluids for abrasive machining

The process fluid fulfills the roles of lubricating, process cooling, bulk cooling, flushing, and cleaning in the abrasive machining process. Surface roughness reduction, tool life increase, and grinding power reduction depend on the lubricating properties of the process fluid.

29. Which of the following is the most accurate machine?

- (a) Milling machine (b) Grinding machine
(c) Shaping machine (d) Jig boring machine

Ans: (d)

30. The function of reducing the Continuous chips into small pieces is done by

Ans: Chip breaker

31. A die is used for

- (a) Reaming (b) External threading in rods or bolts
(c) Drilling (d) Countersinking

Ans: b.

32. A thread chaser is used for

- (a) Reaming (b) External threading of pipes (c) Drilling (d) Countersinking

Ans: b

33. For finishing a hole to a close tolerance, the most appropriate operation is

- (a) Drilling (b) Jig Boring (c) Honing (d) Grinding

Ans: (b)

34. In which of the following machines the quick return mechanism is used

- (a) Planing m/c (b) Shaper (c) Surface grinding (d) Both (a) and (b)

Ans: d.

35. A ball bearing can take... load

- (a) Axial (b) Radial (c) Thrust and radial (d) None of these

Ans: b

36. A thrust bearing can take... load

- (a) Thrust or Axial (b) Radial (c) Thrust and radial (d) None of these

Ans: a

Thrust bearings are designed and used to carry axial loads. They are also called axial bearings. These bearings include thrust ball bearings, thrust cylindrical roller bearings, thrust needle bearings, thrust tapered roller bearings, and thrust spherical roller bearings. Like radial bearings, a thrust bearing contains two race rings, a set of rolling elements, and, frequently a cage for retaining the rolling elements. A major distinction between an axial (thrust) bearing and a radial bearing is the arrangement of bearing race rings. In an axial bearing, the two race rings are arranged side-by-side in a parallel configuration along the axial direction. The rolling elements are sandwiched between the two race rings.

https://link.springer.com/referenceworkentry/10.1007%2F978-0-387-92897-5_333

37. A bimetal bearing is a

- (a) Ball bearing (b) Roller bearing
(c) Sleeve or shell bearing (d) None of these

Ans: c.

38. Which of the following machines does not use single point cutting tool

- (a) Lathe (b) Shaper (c) Milling (d) Planning

Ans: (c)

39. Surface finish of a ground component can be measured in

- (a) mm (b) microns (micrometer) (c) cm (d) None

Ans: (b)

40. Hardness of a material is an indication of its resistance to

- (a) Brittle fracture (b) Indentation/Scratch
(c) Impact load (d) Stress rupture

Ans: (b)

41. In a gear drive the pinion has 20 teeth and its rpm is 50 in clockwise direction. If the gear wheel has 40 teeth what is its rpm and direction of rotation (The gears are spur gears engaging externally)

- (a) 100 clockwise (b) 25 anti clockwise
(c) 100 anti-clockwise (d) 25 clockwise

Ans: (b)

42. What is the heat treatment process for improving the machinability of a metal object?

- (a) Process annealing (b) Hardening
(c) Case hardening (d) None

Ans: (a)

43. An air pressure of 5 kg/cm^2 is acting on a square plate of side 10 cm. What is the thrust on the plate?

- (a) 5 kgf (b) 100 kgf (c) 50 kgf (d) 500kgf

Ans: (d). (Force = pressure x area)

44. Unit of measurement of noise is

- (a) Lux (b) Decibel (c) Weber (d) None of these

Ans: (b)

45. When the carbon content in steel increases, the hardness

- (a) Increases (b) Decreases
(c) Remains same (d) None of these

Ans: (a)

46. The age of the cut tree can be inferred from

- (a) Sap (b) Annular rings (c) Size (d) Colour

Ans: (b)

47. The wood having very good ageing property

- (a) Plywood (b) Devadaru (c) Sal (d) Teak

Ans: (d)

Ageing: The changes in physical and mechanical **properties of wood** due to **aging** originate from changes in the microstructure and in effect from chemical changes in the components.

48. The load bearing capacity of plywood can be improved by

- (a) Resin impregnation (b) Increasing density
(c) Increasing thickness (d) None of these

Ans: (a)

49. Use of wood is not eco-friendly because

- (a) More and more use destroys the eco-balance
(b) Wood usage promotes destruction of forests
(c) Wood is becoming costlier and costlier

d) Both a and b

Ans: (d)

Wood is a versatile raw material and the only renewable construction material. Increasing the proportion of wood in construction can facilitate a reduction in the use of other construction materials, such as concrete, steel and brick. These construction materials don't come from renewable raw materials, they require a great deal of energy for their production and they entail higher emissions of carbon dioxide.

50. For the rear view, motorists use which type of mirror and why?

- (1) Plane mirror, to get real image
- (2) Convex mirror, to get closer view of an object behind the motorist
- (3) Concave mirror, to get magnified image
- (4) None.

Ans: (2)

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